Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of adapting ~~to a payload rate the~~ an effective rate of an MPEG [[T]]transport [[S]]stream originating with an incoming rate to a payload rate, said MPEG transport [[S]]stream having [[of]]a sequence of MPEG packets, said method comprising:

maintaining identifiers that identify MPEG packets that can be discarded;

altering timing information in [[any]] said MPEG packets that bear said timing information;

~~if said incoming rate is less than said payload rate, then selectively~~ inserting stuffing packets into said MPEG [[T]]transport [[S]]stream when said incoming rate is less than said payload rate; and

~~if said incoming rate is greater than said payload rate, then selectively~~ discarding certain packets from said MPEG [[T]]transport [[S]]stream using at least one of the identifiers when said incoming rate is greater than said payload rate.

2. (currently amended) ~~A method according to claim 1 further comprising:~~ A method of adapting an effective rate of an MPEG transport stream originating with an incoming rate to a payload rate, said MPEG transport stream having a sequence of MPEG packets, said method comprising:

maintaining identifiers that identify MPEG packets that can be discarded;

altering timing information in said MPEG packets that bear timing information;

inserting stuffing packets into said MPEG transport stream when said incoming rate is less than said payload rate;

discarding certain packets from said MPEG transport stream using said maintained identifiers when said incoming rate is greater than said payload rate; and

forwarding [[any]] non-discarded MPEG packets after said altering and said inserting ~~packets, if any,~~ into a FIFO~~, said FIFO outputting~~ that outputs packets at said payload rate~~, said forwarding achieved after the altering of timing information~~.

3. (currently amended) A method according to claim 2 further comprising:

temporarily storing each MPEG packet from said MPEG [[T]]transport [[S]]stream in a one-packet buffer prior to forwarding; and

~~prior to altering, inserting and discarding,~~ waiting until said one-packet buffer contains a complete one of said MPEG packets before performing said altering, said inserting, or said discarding.

4. (currently amended) A method according to claim 3 further comprising:

setting a watermark [[point]] for said FIFO.

5. (currently amended) A method according to claim 4 further comprising:

determining which of said MPEG packets bears said timing information.

6. (currently amended) A method according to claim 5 wherein said timing information

~~includes~~ comprises a Program Clock Reference (PCR) value.

7. (currently amended) A method according to claim 6 wherein altering timing information ~~includes~~ comprises:

adding an offset to said PCR value ~~if there are more packets currently~~ when a number of packets in said FIFO [[than]] exceeds said watermark ~~the instant~~ when said one-packet buffer contains a complete MPEG packet; and

subtracting said offset ~~to said PCR value if there~~ when said number of ~~are less~~ packets ~~currently~~ in said FIFO is less than said watermark ~~the instant~~ when said one-packet buffer contains a complete MPEG packet.

8. (original) A method according to claim 7 wherein said offset varies in accordance with said payload rate.

9. (original) A method according to claim 8 wherein said payload rate is a Quadrature Amplitude Modulation (QAM) rate.

10. (original) A method according to claim 9 wherein said offset is 1.001855 ticks per bit for a QAM rate corresponding to 64QAM modulation.

11. (original) A method according to claim 9 wherein said offset is 0.692308 ticks per bit for a QAM rate corresponding to 256QAM modulation.

12. (currently amended) A method according to claim 4 wherein said inserting stuffing packets ~~into said MPEG Transport Stream~~ is performed ~~only if~~ when said FIFO contains a number of packets that is less ~~packets~~ than said watermark ~~the instant~~ when said one-packet buffer contains a complete MPEG packet.

13. (currently amended) A method according to claim 8 wherein a single stuffing packet is inserted into said FIFO prior to forwarding [[of]] said complete MPEG packet [[in]] from said one-packet buffer.

14. (currently amended) A method according to claim 4 wherein said ~~selectively~~ discarding MPEG packets is performed ~~only if~~ when said number of packets in said FIFO ~~contains more packets than~~ exceeds said watermark ~~the instant~~ and when said one-packet buffer contains a complete MPEG packet.

15. (currently amended) A method according to claim 14 wherein said ~~selectively~~ discarding comprises ~~includes~~:

determining whether the complete MPEG packet in said one-packet buffer can be discarded based on said identifiers; and

~~if said complete MPEG packet can be discarded then~~ discarding said complete MPEG packet when said complete MPEG packet can be discarded ~~by not forwarding it to said FIFO~~.

16. (currently amended) A method according to claim 15 wherein said identifier includes a packet ID (PID) and wherein said determining comprises ~~includes~~:

comparing [[the]] said PID of said complete MPEG packet with a list of disposable PIDs[[,]] ; ~~further wherein if the~~

determining whether said PID ~~of said complete MPEG packet~~ is on said list[[,]] ; and [[then]]

discarding said complete MPEG packet when said PID of said complete MPEG packet is on said list ~~can be discarded~~.

17. (currently amended) A method according to claim 16 wherein determining whether said complete MPEG packet can be discarded further comprises ~~includes~~:

~~if said packet is a stuffing packet, then said packet is determined to be discarded~~

determining if said complete MPEG packet is a stuffing packet; and

discarding said complete MPEG packet when the complete MPEG packet is a stuffing packet.

18. (currently amended) A method according to claim [[1]] 2 wherein said stuffing packets ~~is a~~ are NULL packets.

19. (currently amended) A system of adapting ~~to a payload rate the~~ an effective rate of an MPEG [[T]]transport [[S]]stream originating with an incoming rate to a payload rate, said [[S]]stream having [[of]] a sequence of MPEG packets, said system comprising:

logic configured to assign identifiers that identify MPEG packets that can be discarded;

a timing information detection mechanism to determine if said packets include timing information;

a timing information altering mechanism configured to alter timing information in ~~any~~ ~~said~~ packets containing timing [[bearing such]] information;

a one-packet buffer accepting said MPEG packets from said stream;

a FIFO configured to receive altered timing information, said FIFO further ~~capable~~ ~~outputting~~ configured to receive packets from said one-packet buffer and to output packets at said payload rate, said FIFO ~~characterized by~~ including a watermark; and

~~a one-packet buffer accepting said MPEG packets one packet at a time from said Stream;~~

an instantaneous transfer mechanism coupled between said one-packet buffer and said FIFO, said transfer mechanism forwarding a packet from said one-packet buffer [[upon]] when a first condition is present, ~~and a~~ stuffing a NULL packet [[upon]] into said FIFO when a second condition is present, or dropping said packet based on one of the identifiers when a third condition is present.

20. (original) A system according to claim 19 wherein said incoming rate is less than said payload rate.

21. (currently amended) A system of adapting an effective rate of an MPEG transport stream originating with an incoming rate that is less than a payload rate, said stream having a sequence of MPEG packets, said system comprising:

a timing information altering mechanism configured to alter timing information packets containing timing information;

a FIFO configured to receive altered timing information when present, said FIFO further configured to output packets at said payload rate, said FIFO including a watermark;

a one-packet buffer accepting said MPEG packets from said stream;

an instantaneous transfer mechanism coupled between said one-packet buffer and said FIFO, said transfer mechanism forwarding a packet from said one-packet buffer when a first condition is present, wherein the first condition occurs when said FIFO contains a number of packets that is below said watermark, and said transfer mechanism inserting a NULL packet into said FIFO when a second condition is present.

~~A system according to claim 20 wherein said first condition includes said FIFO having less packets than said watermark the instant said one-packet buffer contains a complete MPEG packet.~~

22. (currently amended) A system according to claim [[19]] 21 wherein said timing information includes a Program Clock Reference (PCR) value.

23. (currently amended) A system according to claim 21 wherein said second condition ~~includes~~ occurs when said FIFO ~~having more~~ contains a number of packets [[than]] that is greater than said watermark ~~the instant~~ when said one-packet buffer contains a complete MPEG packet.

24. (currently amended) A system according to claim [[19]] 21 wherein said timing information altering mechanism ~~includes~~ comprises:

a mechanism to test for packets carrying timing information, said mechanism to test coupled to said one-packet buffer;

a mechanism to determine [[the]] an amount by which said timing information should be altered, said mechanism to determine coupled to said FIFO; and

a mechanism to ~~perform arithmetic on~~ alter said timing information by said amount, said mechanism to perform coupled to said mechanism to determine.

25. (currently amended) A system according to claim 24 wherein said mechanism to determine receives said payload rate and determines said amount based upon said payload rate and [[the]] a state of said FIFO in relation to said watermark ~~at the instant~~ when said complete MPEG packet arrives in said one-packet buffer.

26. (currently amended) A system according to claim 25 wherein said mechanism to ~~perform arithmetic~~ alter adds said amount to said timing information.

27. (currently amended) A system according to claim 26 wherein said amount is greater than zero ~~if there are more~~ when the number of packets in said FIFO [[than]] exceeds said watermark ~~at the instant~~ when said complete MPEG packet arrives in said one-packet buffer.

28. (currently amended) A system according to claim 26 wherein said amount is less

than zero ~~if there are more~~ when the number of packets in said FIFO [[than]] exceeds said watermark ~~at the instant~~ when said complete MPEG packet arrives in said one-packet buffer.

29. (currently amended) A system of adapting ~~to a payload rate the~~ an effective rate of an MPEG [[T]]transport [[S]]stream originating with an incoming rate to a payload rate, said [[S]]stream having of a sequence of MPEG packets, said system comprising:

a timing information altering mechanism configured to alter timing information in ~~any said~~ packets ~~bearing such~~ containing timing information:

a FIFO ~~capable outputting~~ to output packets at said payload rate, said FIFO ~~characterized~~ including [[by]] a watermark;

a ~~one-packet~~ buffer ~~accepting~~ to accept said MPEG packets from said stream ~~one packet at a time from said Stream~~;

an instantaneous transfer mechanism coupled between said ~~one-packet~~ buffer and said FIFO, said mechanism ~~forwarding~~ to forward a packet from said ~~one-packet~~ buffer to said FIFO [[upon]] when a first condition is present or to stuff a NULL packet into said FIFO when a second condition is present; and

a mechanism to discard a packet in said ~~one-packet~~ buffer ~~based upon~~ when a ~~second~~ third condition is present, said discarded packet not forwarded to said FIFO.

30. (currently amended) A system according to claim 29 wherein said incoming rate ~~is more than~~ exceeds said payload rate.

31. (currently amended) A system according to claim 30 wherein said first condition ~~includes~~ is present when said FIFO ~~having less packets than~~ contains a number of packets that is below said watermark ~~the instant~~ when said ~~one packet~~ buffer contains a complete MPEG packet.

32. (currently amended) A system according to claim [[29]] 31 wherein said timing information includes a Program Clock Reference (PCR) value.

33. (currently amended) A system according to claim 31 wherein said third ~~second~~ condition ~~includes~~ occurs when said FIFO contains a number of ~~having more~~ packets that exceeds ~~than~~ said watermark ~~the instant~~ when said ~~one packet~~ buffer contains a complete MPEG packet, said ~~second~~ third condition further ~~including~~ identifying whether said packet can be disposed of.

34. (currently amended) A system according to claim [[29]] 31 wherein said timing information altering mechanism comprises ~~includes~~:

a mechanism to test for packets carrying timing information, said mechanism to test coupled to said ~~one packet~~ buffer;

a mechanism to determine [[the]] an amount by which said timing information should be altered, said mechanism to determine coupled to said FIFO; and

a mechanism to ~~perform arithmetic on~~ alter said timing information by said amount, said mechanism to perform coupled to said mechanism to determine.

35. (currently amended) A system according to claim 34 wherein said mechanism to determine receives said payload rate and determines said amount based upon said payload rate and [[the]] a state of said FIFO ~~in relation~~ with respect to said watermark ~~at the instant~~ when said complete MPEG packet arrives in said ~~one packet~~ buffer.

36. (currently amended) A system according to claim 35 wherein said mechanism to ~~perform arithmetic~~ alter adds said amount to said timing information.

37. (currently amended) A system according to claim 36 wherein said amount is greater than zero ~~if there are more~~ when the number of packets in said FIFO [[than]] exceeds said watermark ~~at the instant~~ when said complete MPEG packet arrives in said ~~one packet~~ buffer.

38. (currently amended) A system according to claim 36 wherein said amount is less than zero ~~if there are more~~ when the number of packets in said FIFO [[than]] exceeds said watermark ~~at the instant~~ when said complete MPEG packet arrives in said ~~one packet~~ buffer.

39. (original) A system according to claim 33 further comprising:

a mechanism to test whether said packet in said ~~one packet~~ buffer can be disposed of in support of checking said second condition.